



MEMORANDUM

DATE: September 21, 2007

TO: Rose Longoria, Yakama Nation ERWM

FROM: Bob Dexter, Ph.D., RIDOLFI Inc.

SUBJECT: **Brief Review of “Memorandum: Summary of Lamprey Ammocoete Tissue Analysis”, Windward Environmental, September 12, 2007**

Overall the authors seemed to have made a reasonable first cut. I do have some suggestions for any future presentation of this information.

1. I did a random check of the concentrations presented in the memo against those presented in the data report and I didn't find any discrepancies.
2. Given the limitation in the areas sampled, care should also be given to statements that few substances were found at concentrations exceeding the TRV (Tables 2 and 3). None of the lamprey samples appear to have been collected from locations with high concentrations in the sediments of the substances measured, and those lamprey samples that were collected from the ISA were composited over a number of locations. Thus, there is ample reason to believe that there are at least a few lamprey with substantially higher tissue concentrations than reflected in the current data.

Further, as has been mentioned from time to time, the Trustees may choose other, more protective, screen criteria than those used in the memo. I did not attempt to determine how appropriate they are.

Finally, it's probably important to keep this issue in perspective. The Trustees have already been presenting arguments that no fish TRV may be appropriate for lamprey, so we may be limited in how far we push this issue. In addition, it seems that EPA would likely feel that the “hard data” from the definitive bioassays would far out way any possible risks identified from a tissue TRV comparison.

3. The comparisons of concentrations among biota tissue (Table 6) should be normalized to lipids for mercury and the organic compounds. These lipophilic substances tend to be relatively enriched in high-lipid tissues. Despite their reputation, the ammocoetes did not have particularly high lipid concentrations, and even concentrations in the macrophalmia were probably similar or lower than some of the other lipid-rich species.
4. The comparisons among the maximum tissue concentrations observed in ammocoete and macrophalmia tissue (Table 6) is misleading because the lamprey samples were generally collected from much more limited locations, were composited over a wide area, and most likely



not recovered from areas with higher concentrations of the chemicals, from which many of the other biota were collected. A better reflection of the relative concentrations would require the data for the other biota be selected from those samples from the same locations, and composited in the same fashion (area weighted), as the lamprey samples.

5. The PAH data should be included.